

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name; and

I verily believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: PNA-DNA-PNA Chimeric Macromolecules the specification of which:

() is attached hereto.

(XX) was filed on November 24, 1993 as Application Serial No. 08/158,352.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to be material to the patentability of this application in accordance with 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of any application on which priority is claimed:

Country	Number	Date Filed	Priority Claimed
<u>PCT</u>	<u>US92/11339</u>	<u>12/23/92</u>	<u>X</u>

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to be material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Application Serial No.	Filing Date	Status (patented, pending)
<u>814,961</u>	<u>12/24/91</u>	<u>Pending</u>

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: John W. Caldwell and Joseph Lucci, Registration Nos. 28,937 and 33,307 of the firm of WOODCOCK WASHBURN KURTZ MACKIEWICZ & NORRIS, One Liberty Place - 46th Floor, Philadelphia, Pennsylvania 19103, and Herb Boswell and Laurel Bernstein, Registration Nos. 27,311 and P37,280, of ISIS Pharmaceuticals, 2280 Faraday Avenue, Carlsbad, California 92008.

Address all telephone calls and correspondence to:

Joseph Lucci
WOODCOCK WASHBURN KURTZ MACKIEWICZ & NORRIS
One Liberty Place - 46th Floor
Philadelphia, PA 19103
Telephone No. 215-568-3100.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the

United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

	Full Name Phillip Dan Cook	Inventor's Signature <i>Phillip Dan Cook</i>	Date 2/22/94
1	Residence Carlsbad, CA 92009	Citizenship U.S.A.	
	Post Office Address 7340 Bolero Street		
	Full Name	Inventor's Signature	Date
2	Residence	Citizenship	
	Post Office Address		
	Full Name	Inventor's Signature	Date
3	Residence	Citizenship	
	Post Office Address		
	Full Name	Inventor's Signature	Date
4	Residence	Citizenship	
	Post Office Address		
	Full Name	Inventor's Signature	Date
5	Residence	Citizenship	
	Post Office Address		

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I verily believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: **PNA-DNA-PNA Chimeric Macromolecules** the specification of which:

(xx) is attached hereto.

() was filed on _____ as Application Serial No. _____
_____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

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_____	_____	_____	_____

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Telephone No. 215-568-3100.

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United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

	Full Name <u>Phillip Dan Cook</u>	Inventor's Signature	Date
1	Residence 7340 Bolero Street Carlsbad, CA 92009	Citizenship <u>CA</u> U.S.A.	
	Post Office Address Same As Above		
	Full Name	Inventor's Signature	Date
2	Residence	Citizenship	
	Post Office Address		
	Full Name	Inventor's Signature	Date
3	Residence	Citizenship	
	Post Office Address		
	Full Name	Inventor's Signature	Date
4	Residence	Citizenship	
	Post Office Address		
	Full Name	Inventor's Signature	Date
5	Residence	Citizenship	
	Post Office Address		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Phillip Dan Cook

Serial No.: N/A

Group Art Unit: N/A

Filed: Herewith

Examiner: N/A

For: PNA-DNA-PNA CHIMERIC MACROMOLECULES

BOX SEQUENCE

Honorable Commissioner of
Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

STATEMENT TO SUPPORT FILING AND SUBMISSION IN ACCORDANCE
WITH 37 CFR §§ 1.821 THROUGH 1.825

(XX) I hereby state, in accordance with the requirements of 37 C.F.R. §1.821(f), that the contents of the paper and computer readable copies of the Sequence Listing, submitted in accordance with 37 CFR §1.821(c) and (e), respectively are the same.

() I hereby state that the submission filed in accordance with 37 CFR §1.821(g) does not include new matter.

() I hereby state that the submission filed in accordance with 37 CFR §1.821(h) does not include new matter or go beyond the disclosure in the international application as filed.

() I hereby state that the amendments, made in accordance with 37 CFR §1.825(a), included in the substitute sheet(s) of the Sequence Listing are supported in the application, as filed, at pages _____. I hereby state that the substitute sheet(s) of the Sequence Listing does (do) not include new matter.

() I hereby state that the substitute copy of the computer readable form, submitted in accordance with 37 CFR §1.825(b), is the same as the amended Sequence Listing.

() I hereby state that the substitute copy of the computer readable form, submitted in accordance with 37 CFR §1.85(d), contains identical data to that originally filed.

Date: November 24, 1993


Signature
John W. Caldwell
Registration No. 28,937

WOODCOCK WASHBURN KURTZ
MACKIEWICZ & NORRIS
One Liberty Place - 46th Floor
Philadelphia, PA 19103
(215) 568-3100

A S S I G N M E N T

WHEREAS, I, Phillip Dan Cook, herein after referred to as the assignor, residing at 641 Avilar Court, San Marcos, CA 92069, am the inventor of certain inventions or improvements for which I have made application for Letters Patent of the United States, identified as Serial No. 08/158,352, filed November 24, 1993, entitled PNA-DNA-PNA Chimeric Macromolecules; and

WHEREAS, ISIS Pharmaceuticals, Inc., hereinafter referred to as the assignee, of 2280 Faraday Avenue, Carlsbad CA, a corporation of Delaware is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in consideration of the sum of One Dollar (\$1.00) to me in hand paid by said assignee, and other good and valuable consideration, the receipt of which is hereby acknowledged, I, the said assignor, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, to said assignee, the entire right, title and interest in and to said inventions or improvements and said application and any and all continuations, divisions and renewals of and substitutes for said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any re-issue or re-issues or extension or extensions of said Letters Patent, and assign to and authorize said assignee to file in my name applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

AND I hereby covenant that I have full right to convey the entire interest herein assigned, and that I have not executed and will not execute any agreement in conflict herewith, and I further covenant and agree that I will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees or legal representatives, and I agree to communicate to said

assignee, or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND I hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents of applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

IN WITNESS WHEREOF, I have hereunto set my hand and seal.



Phillip Dan Cook

(L.S.)

State of California :

COUNTY OF San Diego : SS

On this 28th day of April 1995, before me personally came the above named Phillip Dan Cook, to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.





Charmaine G. Webb

Notary Public